

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Trophic Control of Grassland Communities

Type of Project: Research

Project Discipline: Natural

Funding Agency: Bureau of Land Management

Other Partners/Cooperators: University of Montana

Effective Dates: 6/17/2004 - 6/1/2012

Funding Amount: \$32,000 (FY04: \$5000; FY05: \$5000; FY07: \$11,000; FY08: \$11,000)

Investigators and Agency Representative:

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Project Abstract:

Whether top avian and mammalian predators as a group fundamentally affect the structure and the function of terrestrial communities is poorly understood. Working in a grassland system in western Montana with an intact predator assemblage, we are conducting large-scale (1haetre plot size) experiment to determine the impact of predators and/or ungulates in affecting small mammal population size and behavior and plant community productivity and structure. We have built exclosures to either exclude avian and mammalian predators and ungulates and just ungulates from plots. We have been examining the impacts of avian and mammalian predators on an assemblage of small mammal herbivores and granivores and in-turn determining how top-down effects on granivorous and herbivorous rodents influence their impact on grassland flora composition, productivity, disturbance and invisibility, and nutrient dynamics. Work to date suggests minimal impacts of predators or ungulates on small mammal populations and on vegetation, but the work is ongoing.

Outcomes with completion dates: Publications will be produced after several more years of results.

Keywords: Trophic cascade, predation, herbivory, small mammals, community structure